

Association of pro-inflammatory cytokines with breast cancer risk factors

Hanna Mirette

Laval University, Canada

Pro-inflammatory cytokines such as interleukin-6 (IL-6) and tumor necrosis factor- α (TNF- α) seem to play a role in breast cancer development. We examined the association of IL-6 and TNF- α protein expression levels in normal breast epithelium with two breast cancer risk factors; mammographic density (MD) and lobular involution. Tissue microarray (TMA) blocks were constructed from normal breast tissue extracted from mastectomy blocks of 20 breast cancer patients aged 50-65 years. The IL-6 and TNF- α epithelial intensity of staining (none, weak, moderate or high) was visually assessed on immunohistochemically stained TMA sections. MD was visually assessed (<25%, 25-49% or \geq 50%) on digitized mammographic images. The degree of lobular involution (none, partial or complete) and the dominant lobular type (type 1, 2 or 3) were evaluated on hematoxylin and eosin stained slides containing normal breast tissue. IL-6 epithelial intensity of staining was positively correlated with MD after adjustment for age and body mass index ($r=0.49$; $p=0.04$). There was a non-significant correlation between TNF- α epithelial intensity of staining and the dominant lobular type after adjustment for parity ($r=0.43$; $p=0.06$). Increased IL-6 expression in normal breast tissue might be associated with increased MD. Modifying pro-inflammatory cytokines expression in normal breast tissue might be a promising tool to affect MD and consequently breast cancer risk.

Biography

Mirette Hanna has completed her bachelor degree of medicine from Alexandria University Faculty of Medicine, Blood bank and Clinical Pathology residency from Ministry of health and a Master Degree of Clinical and Chemical Pathology from Ain-Shams University Faculty of Medicine. She is a Ph.D. candidate in experimental medicine program at Laval University Faculty of Medicine.

mirette.hanna.1@ulaval.ca